

### Trend Study 15-15-04

Study site name: Steven's Mesa.

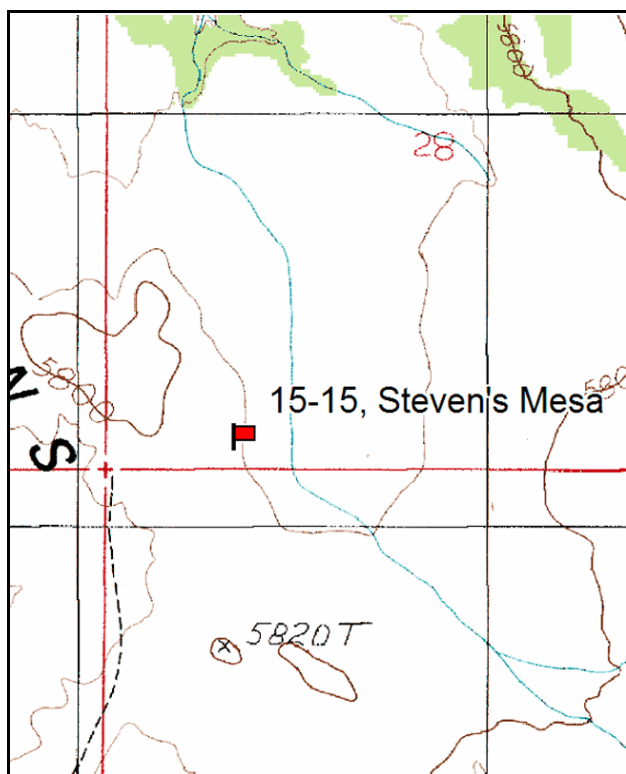
Vegetation type: Desert Shrub.

Compass bearing: frequency baseline 86 degrees magnetic.

Frequency belt placement: line 1 (11ft), line 2 (34ft), line 3 (59ft), line 4 (71ft), line 5 (95ft).

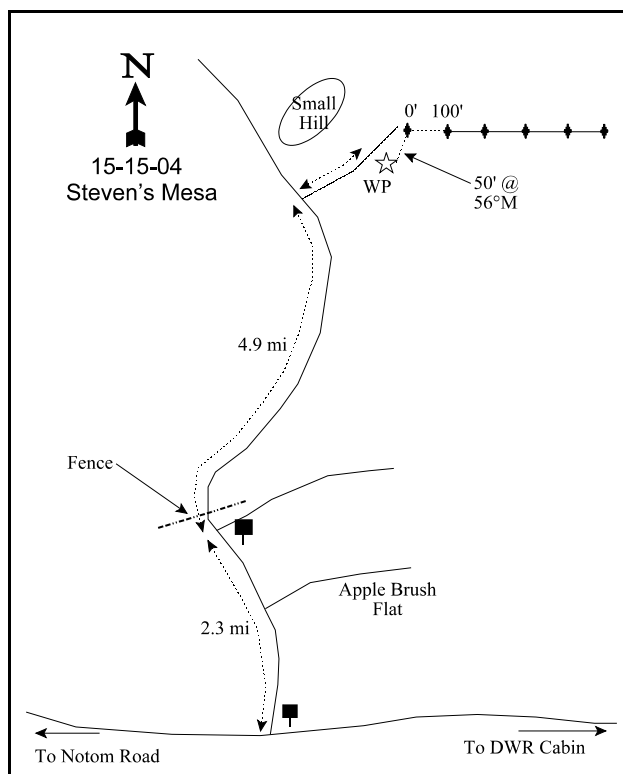
### LOCATION DESCRIPTION

On the road between Notom Road and the DWR State Cabin look for a sign for the turnoff to Stevens Mesa and Apple Brush Flat. Take this turnoff and travel north for 2.3 miles to a fork with a sign for Stevens Mesa and Cedar Creek Bench. Stay to the left passing through a fence and continue 4.9 miles to a very faint 2-track. Take a right onto the 2-track and travel 0.2 miles to a witness post on the right side of the road. The 0-foot stake is 50 feet from the witness post at 56°M and is marked with browse tag #139.



Map Name: Stevens Mesa

Township 30S, Range 9E, Section 28



Diagrammatic Sketch

GPS: NAD 27, UTM 12S 4224180 N, 504380 E

## DISCUSSION

### Stevens Mesa - Trend Study No. 15-15

Stevens Mesa is located on the a lower elevation gently sloping mesa. The area is north and west of Mt. Ellen at an elevation of 5,800 feet. The site has a slight 1% slope to the east. The site was located on this mesa because of the complaints of permittees for the perceived excessive use by bison on this winter allotment. It is felt that the bison are forced down to the lower elevation when the cattle are up high, thereby eating the forage that the cattle would use latter in the winter. It is doubtful that this site would be much use to any class of animal. The pellet group transect showed little use, probably about a year old. The bison use was estimated at only 2 bison days use/acre (5 bdu/ha). Cattle use on the site was evident, but not enough to estimate use. The amount of rabbit droppings was very high on site as almost half of the 100 quadrats had droppings in them.

The soil is a sandy loam with few rocks, but some desert pavement on the surface which is limited to only on average about 6% cover. The soil is loose and easily transported by wind. It is characterized as being slightly alkaline (pH of 7.4) in nature with relatively low amounts of organic matter (.72). The amounts of phosphorus in the soil is marginal for what is thought necessary for normal plant growth. There is a compacted layer of fine sands and clay at about 6 inches with a hardpan of clay at about 10 inches associated with an accumulation of calcium carbonate. The high amount of bare soil (72%), there is obviously a high amount of wind erosion on this site. Serious erosion by water would not be a problem on this site because of the lack of slope and characteristics of a sandy soil. This area basically has a low site potential.

Four-wing saltbush is the only preferred browse species on this site and only had 3% cover with a density of 900 plants/acre in 2004. Percent decadence is acceptable at 18%, but the percentage plants also classified as dying is relatively high (13%), but not unusual for a dry lower elevation site. The remainder of the cover is made up of two useless increaser species, narrowleaf low rabbitbrush and broom snakeweed. Together, these two species had almost 14% cover in 2004. This is not a good indicator of anything other than a downward trend.

The herbaceous understory was poor as total grass cover was only a little over 1%. Forb cover was about 7.5%, but that was nearly completely from annual species with little value. The only good thing that can be said of the site is that cheatgrass was not sampled.

### 2004 APPARENT TREND ASSESSMENT

Litter cover (9%) and vegetative cover (25%) contribute to very little protective ground cover as percent bare soil is very high at 72%. Soil trend would obviously be downward. Most soil loss on this site would mostly be from wind related events rather than water and runoff events because of the characteristic of sandy soil, almost flat ground, and low precipitation area. The shrub component is poorly represented by only four-wing saltbush which only contributes to 3% cover, while two "useless increasers" make up nearly 14% cover, or 81% of the total browse cover. The herbaceous understory is also in poor condition and downward trend because the grass component barely contributes to 1% cover. The forb component is also poorly represented with 99% of the forb cover coming from weedy annuals. Winter range condition (DC index) is only 23 which is rated as poor for a desert shrub community. It received a fairly low value because of the low cover value for the preferred browse species and the poor herbaceous component, for both grasses and forbs.

winter range condition (DC Index) - 23 (poor) Desert shrub type

HERBACEOUS TRENDS --

Management unit 15 , Study no: 15

T y p e	Species	Nested Frequency  '04	Average Cover %  '04
G	<i>Bouteloua gracilis</i>	3	.15
G	<i>Hilaria jamesii</i>	52	.64
G	<i>Oryzopsis hymenoides</i>	24	.26
G	<i>Sporobolus cryptandrus</i>	30	.28
Total for Annual Grasses		0	0
Total for Perennial Grasses		109	1.33
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F	<i>Gilia</i> spp. (a)	39	.42
F	<i>Helianthus annuus</i> (a)	2	.18
F	<i>Lappula occidentalis</i> (a)	12	.11
F	<i>Mentzelia albicaulis</i> (a)	122	5.01
F	<i>Plantago patagonica</i> (a)	4	.01
F	<i>Salsola iberica</i> (a)	31	1.78
F	<i>Sphaeralcea grossulariaefolia</i>	9	.07
F	<i>Townsendia</i> spp.	2	.00
Total for Annual Forbs		210	7.53
Total for Perennial Forbs		11	0.07
Total for Forbs		221	7.61

Values with different subscript letters are significantly different at alpha = 0.10

BROWSE TRENDS --

Management unit 15 , Study no: 15

T y p e	Species	Strip Frequency  '04	Average Cover %  '04
B	<i>Atriplex canescens</i>	28	3.17
B	<i>Chrysothamnus viscidiflorus</i> <i>stenophyllus</i>	62	9.12
B	<i>Ephedra viridis</i>	2	-
B	<i>Gutierrezia sarothrae</i>	71	4.70
Total for Browse		163	16.99

# CANOPY COVER, LINE INTERCEPT --

Management unit 15 , Study no: 15

Species	Percent Cover
	'04
Atriplex canescens	3.29
Chrysothamnus viscidiflorus stenophyllus	8.28
Ephedra viridis	.33
Gutierrezia sarothrae	6.33

# KEY BROWSE ANNUAL LEADER GROWTH --

Management unit 15 , Study no: 15

Species	Average leader growth (in)
	'04
Atriplex canescens	8.2

# BASIC COVER --

Management unit 15 , Study no: 15

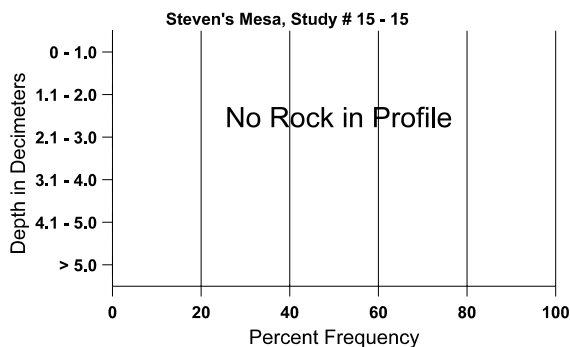
Cover Type	Average Cover %
	'04
Vegetation	25.42
Rock	.02
Pavement	5.69
Litter	8.71
Bare Ground	72.12

# SOIL ANALYSIS DATA --

Management unit 15, Study no: 15, Study Name: Steven's Mesa

Effective rooting depth (in)	Temp °F (depth)	pH	%sand	%silt	%clay	%0M	PPM P	PPM K	ds/m
9.3	70.4 (9.4)	7.4	63.6	13.8	22.6	0.7	10.9	185.6	0.5

## Stoniness Index



PELLET GROUP DATA --

Management unit 15 , Study no: 15

Type	Quadrat Frequency	Days use per acre (ha)
	'04	'04
Rabbit	47	-
Cattle	2	-
Bison	4	2 (5)

BROWSE CHARACTERISTICS --

Management unit 15 , Study no: 15

		Age class distribution (plants per acre)					Utilization					
Y	Plants per Acre (excluding seedlings)	Seedling	Young	Mature	Decadent	Dead	% moderate	% heavy	% decadent	% dying	% poor vigor	Average Height Crown (in)
Atriplex canescens												
04	<b>900</b>	-	100	640	160	40	13	7	18	13	16	25/29
Chrysothamnus viscidiflorus stenophyllus												
04	<b>4220</b>	-	-	4060	160	500	0	0	4	.47	.47	10/15
Ephedra viridis												
04	<b>40</b>	-	-	40	-	-	0	0	-	-	0	8/9
Gutierrezia sarothrae												
04	<b>4720</b>	-	140	4500	80	440	0	0	2	.84	.84	7/9
Opuntia spp.												
04	<b>0</b>	-	-	-	-	-	0	0	-	-	0	4/12